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10/820,760

04/09/2004

Jyh-Shin Pan

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EXAMINER

LAMB, CHRISTOPHER RAY

ART UNIT

PAPER NUMBER

2627

NOTIFICATION DATE

DELIVERY MODE

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/820,760

Applicant(s)

PAN ET AL.

Examiner

Christopher R. Lamb

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-14,18,19 and 21-23 is/are rejected.
- 7) ☐ Claim(s) 2,5,15-17 and 24-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pan et al. (US 2002/0048240) in view of Hasegawa et al. (US 2003/0072229).

Regarding claim 18:

Pan discloses:

A recording drive for controlling a recording operation of recording a recording data on an optical storage medium (Fig. 4) so as to locate a starting position of a succeeding recording operation after a condition of interruption occurs to interrupt the recording operation (abstract), the recording drive comprising:

a recording interruption generating module for enabling a recording interruption enable signal when the condition of interruption occurs (paragraph 33);

a data recording module for generating a recording enable signal to control a recording laser so as to record the recording data on the optical storage medium (paragraph 31),

wherein the data recording module records a special pattern on the optical storage medium, and disables the recording enable signal after the recording interruption enable signal is enabled, and continues to enable the recording enable

signal according to a special pattern detection signal (paragraph 69, where the details are similar to paragraphs 62-68); and

a special pattern detection module for receiving a recorded data signal obtained from the optical storage medium to detect the special pattern, and enabling the special pattern detection signal when the recorded data signal is detected to be similar to or the same as a portion of the special pattern (paragraph 69; where the details are similar to paragraphs 62-68).

Pan does not disclose:

wherein the data recording module "outputs a special pattern information corresponding to the special pattern," and wherein the special pattern detection module receives "the special pattern information."

Hasegawa discloses a module that outputs a special pattern information corresponding to the special pattern (paragraphs 77-78) where a special pattern detection module receives the special pattern information (paragraph 78). Hasegawa discloses that this allows recording to be performed more reliably (paragraph 101).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include in Pan wherein the data recording module outputs a special pattern information corresponding to the special pattern and wherein the special pattern detection module receives the special pattern information.

The motivation would have been to perform more reliable recording.

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3. Claims 1, 3, 4, 6-14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al. (US 2003/007229) in view of Tsukihashi et al. (US 6,560,180).

(In the following rejections, claims 12-14 have been addressed before claims 9-11 for reasons that will be made clear by the rejection).

Regarding claim 1:

Hasegawa discloses:

A recording method for controlling a recording operation of recording a recording data on an optical storage medium so as to locate a starting position of a succeeding recording operation after a condition of interruption occurs to interrupt the recording operation (abstract; specifically, embodiment 4, paragraphs 98-101, is relied upon; however, this embodiment is essentially an earlier embodiment without one component, as noted in paragraph 101, so the disclosure of the earlier embodiment will also be referenced in the rejection), the method comprising:

detecting whether the condition of interruption occurs;

recording a special pattern on the optical storage medium after the condition of interruption occurs and before the recording operation is interrupted (paragraph 100: the subcode sync is recorded before recording is interrupted);

locating the starting position (paragraph 100),

wherein a recorded data signal is obtained from the optical storage medium for searching for the special pattern after the condition of interruption is eliminated (the detection of the subcode sync is described in paragraph 79), and

a detection signal is enabled with a delay of a detection delay time after the recorded data signal is detected to be similar to or the same as a portion of the special pattern (the detection signal is described in paragraph 79: some slight delay time is inherent to all processes in the drive);

enabling a recording laser with a delay of a link delay length after the detection signal is enabled (as noted in paragraph 100, the original recording may be stopped a predetermined number of clock cycles after the subcode sync, and restarted there); and

performing the succeeding recording with a delay of a laser enable time after the recording laser is enabled (a laser enable time is inherent to the drive).

Hasegawa does not explicitly disclose:

“only if the condition of interruption occurs, recording a special pattern on the optical storage medium after the condition of interruption occurs and before the recording operation is interrupted.”

Hasegawa does appear to imply this in paragraph 100, where it states the device “interrupts the recording by stopping various portions thereof immediately after the subcode sync is recorded” and in paragraph 101, “in cases where the timing of interruption of the recorded is controlled as described above...”

These two statements appear to indicate that when the condition of interruption occurs, Hasegawa waits until after the subcode sync is recorded before recording is interrupted. Otherwise, this method would not work when the condition for interruption occurs at a time other than immediately after the subcode sync. However, Hasegawa does not make this explicitly clear.

Tsukihashi discloses wherein only if the condition of interruption occurs, a special pattern is recorded on the optical storage medium after the condition of interruption occurs and before the recording operation is interrupted (column 5, lines 1-15). Tsukihashi discloses that this facilitates managing data when recording is stopped or started (column 2, lines 1-30).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Hasegawa wherein only if the condition of interruption occurs, a special pattern is recorded on the optical storage medium after the condition of interruption occurs and before the recording operation is interrupted.

The motivation would be to manage data when recording is stopped or started.

Regarding claim 3:

In Hasegawa in view of Tsukihashi the step of recording the special pattern on the optical storage medium comprises a step of inserting the special pattern into the recording data (the subcode sync detected by Hasegawa is a standard sync element inserted into recorded data).

Regarding claim 4:

In Hasegawa in view of Tsukihashi the step of recording the special pattern on the optical storage medium further comprises a step of calculating a length of the recording data behind the special pattern and defining it as a rest length (paragraph 100: Hasegawa doesn't use the term rest length, but the "predetermined, relatively small number of clock cycles" is equivalent).

Regarding claim 6:

In Hasegawa in view of Tsukihashi the special pattern comprises a data pattern that can be detected as being different from a normal format of the recording data (the subcode sync is detectable as being different than the data around it).

Regarding claim 7:

In Hasegawa in view of Tsukihashi the special pattern comprises a data pattern that does not appear in the recording data (subcode sync elements are not data).

Regarding claim 8:

In Hasegawa in view of Tsukihashi the special pattern comprises a data pattern having a length of continuously identical signal status greater than the maximum length of continuously identical signal status of the recording data (not specifically disclosed, but inherent: Hasegawa discloses this method for use with CDs, and the in the CD standard subcode syncs comprise elements longer than the maximum run length of the data).

Regarding claim 12:

In Hasegawa in view of Tsukihashi the step of recording the special pattern on the optical storage medium further comprises steps of providing a data position of the recording data from detecting an address information of the recording data (paragraph 75), and storing the data position of the recording data corresponding to where the special pattern on the optical storage medium is recorded as a special pattern data position (paragraph 75).

Regarding claim 13:

In Hasegawa in view of Tsukihashi the step of locating the starting position comprises steps of subtracting a predetermined value from the special pattern data position to obtain a special pattern searching data position (paragraph 75), providing a data position of the recorded data signal from detecting an address information of the recorded data signal (paragraph 79), and starting to search for the special pattern according to the data position of the recorded data signal and the special pattern searching data position (paragraph 79).

Regarding claim 14:

In Hasegawa in view of Tsukihashi the step of locating the starting positing further comprises a step of stopping the searching for the special pattern after searching for the special pattern within a predetermined range (it only looks for the subcode sync of the particular block address, paragraph 79: thus it inherently stops the search outside of that block).

Regarding claims 9-11:

These claims are identical to claims 12-14 except in that they use “a physical address of the optical storage medium from detecting an address information prerecorded on the optical storage medium” instead of the “data position of the recording data from detecting an address information of the recording data.”

As noted in the rejection of claims 12-14 above, Hasegawa in view of Tsukihashi discloses using the address information of the recording data; Hasegawa does not disclose using the “address information prerecorded on the optical storage medium” as per claims 9-11.

However, Tsukihashi discloses using “the address information prerecorded on the optical storage medium” as per these claims (Tsukihashi: column 4, lines 30-45; column 6, lines 1-15). Note that even Hasegawa alone discloses a means to read the address information prerecorded on the optical storage medium (the ATIP decoder of Hasegawa paragraph 57).

It would have been obvious to one of ordinary skill in the art to include in Hasegawa in view of Tsukihashi to use address information prerecorded on the optical storage medium instead of address information of the recording data, because the two kinds of address information are used in the same environment, for the same purpose, and achieve the same result. Furthermore, one of ordinary skill would have expected the Applicant's invention to work equally well using the address information of the recording data instead of the address information prerecorded on the optical storage medium (as shown by Applicant's own disclosure).

Regarding claims 18:

This claim is to the recording drive corresponding to the method of the earlier claims. As Hasegawa discloses a drive along with the method, this claim is rejected as per the earlier claims.

4. Claims 19 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa in view of Tsukihashi as applied to claim 18 above, and further in view of Pan.

Hasegawa in view of Tsukihashi discloses a recording drive as discussed above.

Hasegawa in view of Tsukihashi discloses that the data recording module further comprises:

a rest length calculating unit for calculating a rest length of the recording data after the special pattern and before the recording enable signal being disabled (necessary to implement the “predetermined...number of clock cycles” of Hasegawa paragraph 100);

Hasegawa in view of Tsukihashi does not disclose:

a subtractor for receiving the rest length and a compensation value and subtracting the compensation value from the rest length to generate a recording delay length;

a delay enabling unit for receiving the special pattern detection signal and enabling the recording enable signal with a delay of the recording delay length after the special pattern detection signal is enabled (however, Hasegawa must have a delay enabling unit for at least the rest length to implement paragraph 100).

Pan discloses that the recording start position must be advanced by a compensation value (the laser power settling time) to avoid data grabbing error (paragraph 61).

It would have been obvious to one of ordinary skill in the art to advance the recording start position in Hasegawa in view of Tsukihashi by a compensation value, as taught by Pan (in other words, the recording should be enabled slightly earlier to account for the laser power settling time).

To implement this would require a subtractor for receiving the rest length and a compensation value and subtracting the compensation value from the rest length to generate a recording delay length; and then using that recording delay length in the delay enabling unit.

The motivation would have been to avoid data grabbing error, as taught by Pan.

Regarding claims 21-23:

All elements positively recited have already been identified with respect to earlier rejections. No further elaboration is necessary.

Allowable Subject Matter

5. Claims 2, 5, 15-17, 20, and 24-32 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 2, 5, 15, and 20:

Reasons for the indication of allowable subject matter were given in the previous Office Action.

Regarding claims 16, 17, and 24-32:

They are dependent on one of claims 2, 5, 15, or 20.

Response to Arguments

7. Applicant's arguments filed March 21st, 2007 have been fully considered but they are not persuasive.

Some of Applicant's arguments are no longer relevant due to the new grounds of rejection.

However, Applicant makes one argument that is still applicable. Applicant argues that in the invention, "if there is no interruption, the special pattern is not recorded." Applicant argues Hasegawa does not disclose "recording of the subcode sync only if the condition of the interruption occurs."

Applicant is correct in that Hasegawa records the subcode sync at regular intervals whether or not the interruption occurs. However, this still meets the claim language; or, at least, Hasegawa in view of Tsukihashi meets it.

The amended claim 1 requires "only if the condition of interruption occurs, recording a special pattern on the optical storage medium after the condition of interruption occurs and before the recording operation is interrupted."

Hasegawa in view of Tsukihashi records the special pattern on the optical storage medium regularly.

However, Hasegawa in view of Tsukihashi only records the special pattern "after the condition of interruption occurs and before the recording operation is interrupted" when the condition of interruption occurs. On other occasions it records the special pattern, but in those cases it is not recording it "after the condition of interruption occurs."

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

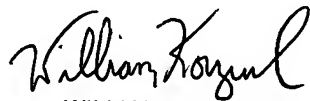
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (571) 272-5264. The examiner can normally be reached on 9:00 AM to 6:30 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRL 5/24/07


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